

Given: Na, Mg, Ca, K

Problem: Place in order of increasing metallic activity (from least to most).

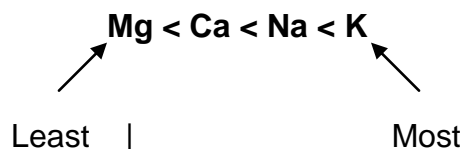
Aim: How can we predict which metal is more active?

metallic activity (MA) – the tendency of an element to lose electrons

ALKALI	ALKALINE EARTH
Na AR = 190 pm EN = 0.9 IE = 496 kJ/mol	Mg AR = 160 EN = 1.3 IE = 736
K AR = 235 EN = 0.8 IE = 419	Ca AR = 197 EN = 1.0 IE = 590

Remember: lower ionization energy, greater tendency to lose electrons

Therefore, the predicted order of metallic activity is:



Note: Na vs. Ca “on a diagonal”.
Group is more important than Period.

Demos: For Grp 1 & 2,

metal + water \implies hydrogen + metal hydroxide
fizzes aka “base” or “alkali”

metal hydroxide + phenolphthalein \implies pink

Therefore, more active metal, faster rate of reaction, more fizz